

## CLAIMS

1. A process for preparing microcrystalline cellulose, characterized in that it comprises the steps of:
  - 5 a) preparing a pulp by repulping,
  - b) pressing the pulp obtained in a),
  - c) decompacting the pulp obtained in b),
  - d) feeding the pulp obtained in c) into a pre-heated reactor,
  - e) cooking the pulp with the pre-heated reactor at a temperature, a time and a
  - 10 pressure selected to obtain a pulp having a desired degree of polymerisation,
  - f) cooling and partially depressurising the reactor by injecting water into said reactor,
  - g) filtering the pulp obtained in f),
  - h) bleaching of the pulp obtained in g), and
  - 15 i) drying the pulp obtained in h).
2. A process according to claim 1, characterized in that in step a) the repulping is carried out at a consistency of 2 to 3%.
- 20 3. A process according to claim 1 or 2, characterized in that in step e) the cooking is carried out with the addition of antioxidants.
4. A process according to any one of claims 1 to 3, characterized in that in step e) the cooking is carried out at a temperature varying from 210° to 235°C.
- 25 5. A process according to any one of claims 1 to 4, characterized in that in step e) the cooking time ranges between 4 and 25 minutes according to the desired degree of polymerisation.
- 30 6. A process according any one of claims 1 to 5, characterized in that following the cooking step e), it further comprises a purification step.

7. A process according to claim 6, characterized in that the purification step consist of filtering the pulp obtained in step e).

5 8. A process according to claim 6, characterized in that the purification step consist of treating the pulp obtained in e) with a caustic soda solution.

9. A process according to any one of claims 1 to 8, characterized in that following cooling step f), the process further comprises a bleaching step.

10 10. A process according to claim 9, characterized in that the bleaching step is carried out at a temperature ranging between 60° and 120°C and at an air or oxygen pressure of 120 psi.

15 11. A process according to claim 10, characterized in that the bleaching step is carried out in the presence of peroxide, magnesium sulphate, sodium hydroxide DEQUEST\* or a mixture thereof.

20 12. A process according to any one of claims 1 to 11, characterized in that following the filtering step g), the process further comprises a homogenisation step to obtain non colloidal microcrystalline cellulose.

13. A process according to any one of claims 1 to 12, characterized in that it further comprises a washing step prior to the filtration of step g).

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